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EXAMINER

WANG, JIN CHENG

ART UNIT	PAPER NUMBER
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2628

DATE MAILED: 04/03/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/664,878	Applicant(s) TAKESHIMA ET AL.	
	Examiner Jin-Cheng Wang	Art Unit 2628	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 February 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,5,7-11,14,16,17,19,23,25,28-32,34,37-41 and 43-45 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 14,29 and 38 is/are allowed.
- 6) ☒ Claim(s) 1-2, 5, 7-11, 16-17, 19, 23, 25, 28, 30-32, 34, 37, 39-41 and 43-45 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendments

Applicant's submission filed on 2/21/2006 has been entered. Claims 1, 5, 10, 11, 14, 16, 19, 25, 28, 29, 30, 31, 34, 37, 38, 39, 40, 43, and 44 have been amended. Claims 3-4, 6, 12-13, 15, 18, 20-22, 24, 26-27, 33, 35-36, and 42 have been canceled. Claims 1-2, 5, 7-11, 14, 16-17, 19, 23, 25, 28-32, 34, 37-41 and 43-45 are pending in the present application.

Response to Arguments

Applicant's arguments with respect to the claim 1 and similar claims have been considered but are moot in view of the new ground(s) of rejection based on Brown et al. U.S. Patent No. 6,665,342 (hereinafter Brown).

Brown implicitly disclose the claim limitation of "the manner including a manner of superposing a frame at a later time on a frame at an earlier time in turn, or a manner of superposing a frame at an earlier time on a frame at a later time in turn." Brown teaches the claim limitation in that Brown discloses the sampling of frames for superposition using the sampled order including any one of more of the following: a consecutive sampling; a sampling every nth frame where n is any whole number; a reverse sampling, and a variable sampling (See Brown column 9, lines 55-60 and column 7, lines 45-65). Consecutive sampling corresponds to the claim limitation of "a manner of superposing a frame at a later time on a frame at an earlier time and reverse sampling corresponds to the claim limitation of "a manner of superposing a frame at an earlier time on a frame at a later time." Brown implicitly teaches the claim limitation by teaching the two sampling orders wherein the strobe photo is updated from the sampled frames of photos according to the sampling order and therefore the superposition manner of the

sampled frames of photos are different depending on the sampled order so as to update the strobe photo via the two sampling orders of the frames of a moving object (column 7-8). Brown discloses in column 5, lines 50-60 that a user specifies a region of interest representing the initial position of the object or based on dynamic information derived from the segmentation mask. Brown further discloses in column 6, lines 60-65 the user enters the strobe parameters 305 which include the start frame f_s , the end frame f_e and the time interval wherein the time interval represents the time period between sample frames. It is noted that the time interval may be positive or negative, corresponding to the forward sampling or reverse sampling order.

Allowable Subject Matter

Claims 14, 29, and 38 are allowed. The following is an examiner's statement of reasons for allowance of these claims: Nothing in the prior art anticipates or suggests, "wherein the determining the extraction parameter comprises: (a) detecting temporary object regions from the respective frames of the first moving image using a temporary extraction parameter; (b) extracting a plurality of temporary object images from the respective frames of the first moving image using the temporary object regions; (c) generating a temporary strobe composite image in which the plurality of temporary object images are superposed; (d) calculating an error between the answer strobe composite image and the temporary strobe composite image; and repeating (a) to (d) while changing the temporary extraction parameter, and determining the temporary extraction parameter which minimizes the error as the extraction parameter" in an image composition method comprising: inputting a first moving image; inputting answer object regions

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for respective frames of the first moving image; extracting a plurality of answer object images from the respective frames of the first moving image using the answer object regions; generating an answer strobe composite image in which the plurality of answer composite images are superposed; determining an extraction parameter which depends on the answer strobe composite image; inputting a second moving image; extracting object images from respective frames of the second moving image using the extraction parameter; and generating a strobe composite image in which the object images extracted from the respective frames of the second moving image are superposed; and wherein the determining the extraction parameter comprises: (a) detecting temporary object regions from the respective frames of the first moving image using a temporary extraction parameter; (b) extracting a plurality of temporary object images from the respective frames of the first moving image using the temporary object regions; (c) generating a temporary strobe composite image in which the plurality of temporary object images are superposed; (d) calculating an error between the answer strobe composite image and the temporary strobe composite image; and repeating (a) to (d) while changing the temporary extraction parameter, and determining the temporary extraction parameter which minimizes the error as the extraction parameter.

The cited reference to Brown et al. U.S. Patent No. 6,665,342 (hereinafter Brown) discloses an image composition method for generating a strobe composite image from a plurality of frames of a moving image, the method comprising: *selecting a first frame 315A of Fig. 4 from the plurality of frames of the video wherein the first frame is a still frame; starting with the first two frames 315A and 315B to compute the attribute difference for each pair of point-wise pixels in the two frames, and updating the segmentation mask and the strobe photo; see Figs. 4-6 and*

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column 7, lines 45-59; setting the attribute difference threshold, user entering the strobe parameters such as the start frame, the end frame, and the time interval and thereby setting how a strobe composite image is synthesized; see column 6, lines 63-67; updating the strobe photo by superposing the plurality of the video frames using the iterator 520, i.e., the strobe photo is updated/composited using the plurality of video frames of the moving object and the composition is performed in accordance with the set superposing rule and the segmentation mask; see column 7-8. Brown discloses the sampling of frames for superposition using the sampled order including any one of more of the following: a consecutive sampling; a sampling every nth frame where n is any whole number; a reverse sampling, and a variable sampling (See Brown column 9, lines 55-60 and column 7, lines 45-65). Consecutive sampling corresponds to the claim limitation of “a manner of superposing a frame at a later time on a frame at an earlier time and reverse sampling corresponds to the claim limitation of “a manner of superposing a frame at an earlier time on a frame at a later time.”

Brown does not disclose the claim limitation of “wherein the determining the extraction parameter comprises: (a) detecting temporary object regions from the respective frames of the first moving image using a temporary extraction parameter; (b) extracting a plurality of temporary object images from the respective frames of the first moving image using the temporary object regions; (c) generating a temporary strobe composite image in which the plurality of temporary object images are superposed; (d) calculating an error between the answer strobe composite image and the temporary strobe composite image; and repeating (a) to (d) while changing the temporary extraction parameter, and determining the temporary extraction

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parameter which minimizes the error as the extraction parameter” set forth in the independent claims 14, 29 and 38.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-2, 5, 7-11, 16-17, 19, 23, 25, 28, 30-32, 34, 37, 39-41 and 43-45 are rejected under 35 U.S.C. 102(e) as being anticipated by Brown et al. U.S. Patent No. 6,665,342 (hereinafter Brown).

Re Claims 1, 25, and 34:

Brown discloses an image composition method for generating a strobe composite image from a plurality of frames of a moving image, the method comprising:

Selecting a first frame from the plurality of frames of the moving image (*e.g., selecting a first frame 315A of Fig. 4 from the plurality of frames of the video wherein the first frame is a still frame*);

Determining a plurality of second frames relating to the first frame (*e.g., starting with the first two frames 315A and 315B to compute the attribute difference for each pair of point-wise*

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pixels in the two frames, and updating the segmentation mask and the strobe photo; see Figs. 4-6 and column 7, lines 45-59);

Setting a superposing manner for the strobe composite image (e.g., setting the attribute difference threshold, user entering the strobe parameters such as the start frame, the end frame, and the time interval and thereby setting how a strobe composite image is synthesized; see column 6, lines 63-67);

Generating the strobe composite image by superposing the plurality of second frames in accordance with the set superposing manner (e.g., updating the strobe photo by superposing the plurality of the video frames using the iterator 520, i.e., the strobe photo is updated/composited using the plurality of video frames of the moving object and the composition is performed in accordance with the set superposing rule and the segmentation mask; see column 7-8).

Brown implicitly discloses the claim limitation of “the manner including a manner of superposing a frame at a later time on a frame at an earlier time in turn, or a manner of superposing a frame at an earlier time on a frame at a later time in turn.” Brown is seen to implicitly teach the claim limitation in that Brown discloses the sampling of frames for superposition using the sampled order including any one of more of the following: a consecutive sampling; a sampling every nth frame where n is any whole number; a reverse sampling, and a variable sampling (See Brown column 9, lines 55-60 and column 7, lines 45-65). Consecutive sampling corresponds to the claim limitation of “a manner of superposing a frame at a later time on a frame at an earlier time and reverse sampling corresponds to the claim limitation of “a manner of superposing a frame at an earlier time on a frame at a later time.”

Brown implicitly teaches the claim limitation by teaching the two sampling orders wherein the strobe photo is updated from the sampled frames of photos according to the sampling order and therefore the superposition manner of the sampled frames of photos are different depending on the sampled order so as to update the strobe photo via the two sampling orders of the frames of a moving object (column 7-8). Brown discloses in column 5, lines 50-60 that a user specifies a region of interest representing the initial position of the object or based on dynamic information derived from the segmentation mask. Brown further discloses in column 6, lines 60-65 the user enters the strobe parameters 305 which include the start frame f_s , the end frame f_e and the time interval wherein the time interval represents the time period between sample frames. It is noted that the time interval may be positive or negative, corresponding to the forward sampling or reverse sampling order.

Claim 2:

Brown further discloses determining the plurality of second frames based on a reference frame whose time corresponds to the time obtained by shifting the time of the first frame a certain time (e.g., column 6, lines 63-67).

Claim 5:

Brown further discloses displaying the frame of interest of user's choice in the moving image and the frame near to the frame of interest and receiving from an input device an

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instruction of designating one of the displayed frames as said first frame (e.g., Figs. 4-5; column 7, lines 45-60).

Claim 7:

Brown further discloses recording setup information of the superposing manner (e.g., storing and updating the segmentation mask and the strobe photo; see column 7-8).

Claim 8:

Brown further discloses generating another strobe composite image by applying the setup information to another moving image (See Figs. 2, 4 and 6).

Re Claims 9, 45:

Brown further discloses displaying the strobe composite image (Figs. 2, 4 and 6); designating one of the plurality of second frames as a designated frame (e.g., Figs. 2-5) and changing a superposing order of the designated frame to an order different from a superposing order before designation (*e.g., users setting the strobe parameters such as the start frame, the end frame and the time interval for sampling the frames so that Brown teaches an original sequence of the frames and a new sequence of frames by changing the strobe parameters and changing the superposing order by changing the start frame, the end frame and the time interval of sampling; column 6*).

Re Claims 10, 28, 37 and 43:

Brown teaches an image composition method comprising:

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Inputting a moving image (inputting a video sequence of frames; Fig. 5) from a camera which captures the moving image (column 4, lines 1-25);

Holding latest N frames of the moving image in a queue (e.g. the latest two frames in Fig. 4 and the latest n frames in Fig. 5);

Accepting a one-click-instruction from a user (e.g., user sets the strobe parameters and all other parameters and runs the strobe process with one-click instruction on a graphical user interface wherein Fig. 1 shows GUI for user interface for the digital strobe process);

Generating a strobe composite image by superposing the latest N frames (e.g., Figs. 2, 4-5) in response to the one-click-instruction (e.g., Fig. 1).

Re Claims 11 and 44:

Brown discloses an image composition method comprising:

Inputting a moving image (*inputting a video sequence of frames; Fig. 5*) from a camera which captures the moving image (column 4, lines 1-25);

Holding latest N frames of the moving images (*e.g., the latest two frames in Fig. 4 and the latest n frames in Fig. 5*);

Detecting from the latest N frames a feature frame that conforms to a strobe image composition condition (*e.g., the feature frame is a frame wherein the difference exceeds the change detection threshold; see column 7, lines 45-59*); and

Generating a strobe composite image by superposing the latest N frames when the feature frame is detected (*e.g., updating the strobe image as well as the segmentation mask when the feature frame is detected; see column 7, lines 45-59*).

Re Claims 16 and 30, 39:

Brown discloses an image composition method for generating a strobe composite image by superposing a plurality of frames of a moving image, the method comprising:

Displaying respective frames of the moving image sequentially (e.g., Figs. 4-6);

Accepting an instruction from an input device (column 6, lines 60-65);

Selecting a reference frame from the respective displayed frames displayed, when the instruction is accepted (e.g., the reference frame being the background image; column 7-8);

Determining a plurality of frames to be subjected to strobe composition based on the reference frame (e.g., column 7-8);

Generating a strobe composite image by superposing the plurality of determined frames (e.g., column 7-8); and

Determining a switching frame at which a superposing manner is switched, and wherein the generating the strobe composition image includes switching the superposing manner between an overlay manner and an underlay manner before and after the switching frame.

Brown implicitly discloses the claim limitation of “determining a switching frame at which a superposing manner is switched, and wherein the generating the strobe composition image includes switching the superposing manner between an overlay manner and an underlay manner before and after the switching frame.” Brown is seen to implicitly teach the claim limitation in that Brown discloses the sampling of frames for superposition using the sampled order including any one of more of the following: a consecutive sampling; a sampling every nth

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frame where n is any whole number; a reverse sampling, and a variable sampling (See Brown column 9, lines 55-60 and column 7, lines 45-65). Consecutive sampling corresponds to the claim limitation of “a manner of superposing a frame at a later time on a frame at an earlier time and reverse sampling corresponds to the claim limitation of “a manner of superposing a frame at an earlier time on a frame at a later time.”

Brown implicitly teaches the claim limitation by teaching the two sampling orders wherein the strobe photo is updated from the sampled frames of photos according to the sampling order and therefore the superposition manner of the sampled frames of photos are different depending on the sampled order so as to update the strobe photo via the two sampling orders of the frames of a moving object (column 7-8). Brown discloses in column 5, lines 50-60 that a user specifies a region of interest representing the initial position of the object or based on dynamic information derived from the segmentation mask. Brown further discloses user's switching of the superposition manner in column 6, lines 60-65 that the user enters the strobe parameters 305 which include the start frame f_s , the end frame f_e and the time interval wherein the time interval represents the time period between sample frames. It is noted that the time interval may be positive or negative, corresponding to the forward sampling or reverse sampling order.

Claim 17:

Brown further discloses setting a time interval (column 6, lines 62-67); between the respective frames for displaying the respective frames (column 6, lines 62-67).

Re Claims 19, 31 and 40:

Brown discloses an image composition method comprising:

Determining frames corresponding to start points of strobe composition (e.g., column 7-8 and Figs. 4-6);

Generating strobe composite images by superposing frames in turn based on each of the start points (e.g., Figs. 4-6 and column 7-8);

Displaying the strobe composite images sequentially (e.g., Figs. 4-6 and column 7-8) and

Determining a switching frame at which a superposing manner is switched, and wherein the generating the strobe composition image includes switching the superposing manner between an overlay manner and an underlay manner before and after the switching frame.

Brown implicitly discloses the claim limitation of “determining a switching frame at which a superposing manner is switched, and wherein the generating the strobe composition image includes switching the superposing manner between an overlay manner and an underlay manner before and after the switching frame.” Brown is seen to implicitly teach the claim limitation in that Brown discloses the sampling of frames for superposition using the sampled order including any one of more of the following: a consecutive sampling; a sampling every nth frame where n is any whole number; a reverse sampling, and a variable sampling (See Brown column 9, lines 55-60 and column 7, lines 45-65). Consecutive sampling corresponds to the claim limitation of “a manner of superposing a frame at a later time on a frame at an earlier time and reverse sampling corresponds to the claim limitation of “a manner of superposing a frame at an earlier time on a frame at a later time.”

Brown implicitly teaches the claim limitation by teaching the two sampling orders wherein the strobe photo is updated from the sampled frames of photos according to the sampling order and therefore the superposition manner of the sampled frames of photos are different depending on the sampled order so as to update the strobe photo via the two sampling orders of the frames of a moving object (column 7-8). Brown discloses in column 5, lines 50-60 that a user specifies a region of interest representing the initial position of the object or based on dynamic information derived from the segmentation mask. Brown further discloses user's switching of the superposition manner in column 6, lines 60-65 that the user enters the strobe parameters 305 which include the start frame f_s , the end frame f_e and the time interval wherein the time interval represents the time period between sample frames. It is noted that the time interval may be positive or negative, corresponding to the forward sampling or reverse sampling order.

Re Claims 23, 32 and 41:

Brown discloses an image composition method for generating a strobe composite image by superposing a plurality of frames of a moving image, the method comprising:

Inputting a feature point of an object (e.g., inputting the feature point such as the shark tail and the shark head of the moving shark; see column 8);

Obtaining a locus pattern by racing the feature point in the strobe composite image (e.g., the locus trajectories or velocity associated with the shark tail and the shark head are drawn in Fig. 6);

Analyzing a motion pattern of the object on the basis of the obtained locus pattern (e.g., column 8, lines 26-48 describes the shark locomotion).

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

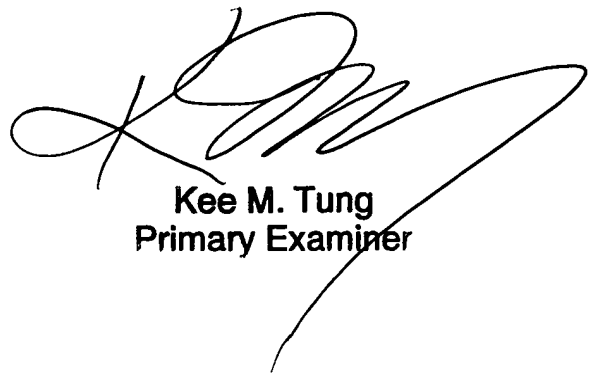
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jin-Cheng Wang whose telephone number is (571) 272-7665. The examiner can normally be reached on 8:00 - 6:30 (Mon-Thu).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kee Tung can be reached on (571) 272-7794. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

jcw



Kee M. Tung
Primary Examiner